



Listing of Claims

Claims 1-33 (canceled)

Claim 34. (currently amended) A method of inducing an immune response toward a mixed Th1/Th2 type response directed against an antigen or hapten, in which response the Th1 response is at least 0.5 times ~~close to~~ the Th2 response, comprising the step of administering to a living animal body an amount of a *Klebsiella pneumoniae* membrane fraction admixed with the antigen or hapten, which is effective in inducing the immune response toward a mixed Th1/Th2 type response directed against the antigen or hapten, in which response the Th1 response is at least 0.5 times ~~close to~~ the Th2 type response, and wherein said *Klebsiella pneumoniae* membrane fraction is obtained by a process of preparation comprising a step of lysing the *Klebsiella pneumoniae* bacteria after culture and a step of ~~separating~~ recovering *Klebsiella pneumoniae* the fraction ~~comprising the membranes from the total lysate obtained after the step of lysing.~~

Claim 35. (canceled)

Claim 36. (withdrawn) The use of Claim 34, wherein the membrane fraction is prepared by a method comprising the following steps:

- a) culture of the bacteria in a culture medium allowing their growth followed by centrifugation of the culture;
- b) where appropriate, deactivation of the lytic enzymes of the bacterial pellet obtained in step a), followed by centrifugation of the suspension obtained;
- c) extraction and removal of nonmembrane proteins and of nucleic acids from the pellet obtained in step a) or b) by at least one cycle of washing the pellet in an extraction solution;
- d) digestion of the membrane pellet obtained in step c) in the presence of protease enzymes, followed by centrifugation;
- e) at least one cycle of washing of the pellet obtained in step d) in physiological saline and/or in distilled water; and
- f) ultrasonication of the pellet obtained in step e).

Claim 37. (withdrawn) The use of Claim 34, wherein the membrane fraction is prepared by a method comprising the following steps:

- a) culture of the bacteria in a culture medium allowing their growth, followed, where appropriate, by centrifugation;
- b) freezing of the culture medium or of the pellet obtained in step a) followed by thawing and drying of the cells;
- c) removal, by means of a DNase, of the nucleic acids from the dry cells obtained in step b) which have been resuspended;
- d) grinding of the cells obtained in step c) and clarification of the suspension obtained;
- e) precipitation, in an acid medium, of the suspension obtained in step d) and removal of the pellet;
- f) neutralization of the supernatant obtained in step e) containing the membrane suspension, followed by dialysis and concentration of the membrane suspension; and
- g) sterilization of the concentrated membrane suspension obtained in step f).

Claim 38. (previously presented) The method of claim 34, wherein the antigen or hapten is an antigen or hapten specific to an infectious agent or the antigen is associated with tumor cells.

Claim 39. (canceled)

Claim 40. (canceled)

Claim 41. (previously presented) The method of Claim 34, wherein the antigen or hapten is covalently coupled with a supporting peptide to form a complex that binds to mammalian serum albumin.

Claim 42. (previously presented) The method of Claim 41, wherein the supporting peptide is a peptide fragment of the streptococcal G protein.

Claim 43. (previously presented) The method of claim 41, wherein the complex is prepared by recombinant technology.

Claims 44-48 (canceled)

Claim 49. (currently amended) The pharmaceutical composition of Claim 72, wherein the composition comprises an agent, selected from a liposome, a microsphere or a nanosphere, ~~which carries the membrane fraction associated with the antigen, hapten or complex, and wherein the composition is~~ in the form of an emulsion or encapsulated particle, thereby enhancing its stability and /or its immunogenicity.

Claim 50. (previously presented) The pharmaceutical composition of Claim 49, wherein the agent is an oil-in-water or water-in-oil type emulsion.

Claim 51. (canceled)

Claim 52-54 (canceled)

Claim 55. (withdrawn) The use of Claim 34 for the preparation of a pharmaceutical composition intended for the prevention or treatment of infectious diseases or cancers.

Claim 56. (withdrawn) The use of Claim 55, wherein the infectious disease is of viral, bacterial, fungal or parasitic origin.

Claim 57. (withdrawn) The use of Claim 56 for the preparation of a pharmaceutical composition intended for the prevention or treatment of paramyxovirus infections.

Claim 58. (withdrawn) The use of Claim 57, wherein the paramyxovirus is a respiratory syncytial virus.

Claim 59. (withdrawn) The use of Claim 58, wherein the antigen associated with the membrane fraction comprises the peptide G2Na of SEQ ID No. 4 or one of its homologs whose sequence exhibits a degree of identity of at least 80% with SEQ ID No. 4.

Claim 60. (withdrawn) The use of Claim 59, wherein the peptide G2Na or one of its homologs is covalently coupled with a C-terminal fragment (BB) of the streptococcal G protein to form a complex capable of binding to mammalian serum albumin.

Claim 61. (withdrawn) The use of Claim 57, wherein the paramyxovirus is a parainfluenzae virus.

Claim 62. (withdrawn) A pharmaceutical composition comprising a membrane fraction prepared by the method of Claim 36 and an antigen or hapten associated with the membrane fraction.

Claim 63. (withdrawn) A pharmaceutical composition comprising a membrane fraction prepared by the method of Claim 37 and an antigen or hapten associated with the membrane fraction.

Claim 64. (withdrawn) The pharmaceutical composition of Claim 62, wherein the antigen is chosen from paramyxovirus peptide fragments.

Claim 65. (withdrawn) The pharmaceutical composition of Claim 63, wherein the antigen is chosen from paramyxovirus peptide fragments.

Claim 66. (withdrawn) The pharmaceutical composition of Claim 64, wherein the paramyxovirus is a respiratory syncytial virus or a parainfluenzae virus.

Claim 67. (withdrawn) The pharmaceutical composition of Claim 65, wherein the paramyxovirus is a respiratory syncytial virus or a parainfluenzae virus.

Claim 68. (withdrawn) The pharmaceutical composition of Claim 66, wherein the antigen associated with the membrane fraction comprises the peptide G2Na of SEQ ID No. 4 of the respiratory syncytial virus or a peptide whose sequence exhibits a degree of identity of at least 80% with SEQ ID No. 4.

Claim 69. (withdrawn) The pharmaceutical composition of Claim 67, wherein the antigen associated with the membrane fraction comprises the peptide G2Na of SEQ ID No. 4 of the respiratory syncytial virus or a peptide whose sequence exhibits a degree of identity of at least 80% with SEQ ID No. 4.

Claim 70. (withdrawn) The pharmaceutical composition of Claim 68, wherein the peptide G2Na, or one of its homologs, is covalently coupled with a C-terminal fragment (BB) of the streptococcal G protein to form a complex capable of binding to mammalian serum albumin.

Claim 71. (withdrawn) The pharmaceutical composition of Claim 69, wherein the peptide G2Na, or one of its homologs, is covalently coupled with a C-terminal fragment (BB) of the streptococcal G protein to form a complex capable of binding to mammalian serum albumin.

Claim 72. (currently amended) A pharmaceutical composition comprising a *Klebsiella pneumoniae* membrane fraction admixed with an antigen or hapten, which is effective in inducing an immune response toward a mixed Th1/Th2 type response directed against the antigen or hapten, in which response the Th1

response is at least 0.5 times close to the Th2 type response, and with a pharmaceutically acceptable carrier, diluent and/or additive, and wherein said *Klebsiella pneumoniae* membrane fraction is obtained by a process of preparation comprising a step of lysing the *Klebsiella pneumoniae* bacteria after culture and a step of separating recovering *Klebsiella pneumoniae* the fraction ~~comprising the membranes~~ from the total lysate obtained after the step of lysing.